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Peter Szpak

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EXAMINER

PROCTOR, JASON SCOTT

ART UNIT

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/698,805	<b>Applicant(s)</b> SZPAK ET AL.	
	<b>Examiner</b> Jason Proctor	<b>Art Unit</b> 2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) 11-31,38-41,43 and 44 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10,32-37 and 42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

Claims 1-10, 32-37, and 42 were rejected in the Office Action of 10 August 2007.

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 13 November 2007 has been entered.

The 13 November 2007 submission has amended claims 1, 9, 32, and 42. Claims 1-44 are pending in this application. Claims 11-31, 38-41, and 43-44 are withdrawn as the result of a previous election.

Claims 1-10, 32-37, and 42 are rejected.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. § 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 1-10, 32-37, and 42 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Independent claims 1, 32, and 42 have been amended to recite “an executable graphical model”. Applicants’ remarks attempt to distinguish the claimed invention over the prior art based in part on this limitation. Applicants allege that support for this feature is found in the specification at pages 14, lines 16-18 and/or page 8, last line – page 9, line 2 (13 November 2007 remarks, page 1).

However, page 8, last line – page 9, line 2 discloses, “A block diagram execution engine 6d, also implemented in the application, is used to process a graphical model to produce simulation results or to convert the graphical model to executable code.” The application does not disclose an “executable graphical model” but rather a graphical model that, when *processed* or *converted* by the unclaimed “block diagram execution engine”, becomes *executable instructions*.

Further, as known in the art, computer processors execute instructions, not graphical models.

Therefore, a person of ordinary skill in the art would be unable to make and/or use the invention as claimed because the application does not disclose an *executable graphical model*, but rather discloses a model that may be processed or converted into executable instructions.

Claims rejected but not specifically mentioned stand rejected by virtue of their dependence.

### ***Response to Arguments – 35 USC § 102***

2. The previous rejection of claim 42 as being anticipated by US Patent No. 7,167,817 to Mosterman et al. is withdrawn in response to the amendments to claim 42.

**3. Regarding the previous rejections under 35 U.S.C. § 102 based upon US Patent No. 6,411,923 to Stewart et al., Applicants argue primarily that:**

Claims 1 and 32 do not recite "an electronic device including memory for storing computer program instructions and data... A 35 U.S.C. § 102 rejection requires that a single reference disclose all features of a claim. Applicants respectfully point out that the Examiner is mistaken in saying that claim 1 recites "an electronic device..." because claim 1 does not include these features.

The Examiner respectfully traverses this argument as follows.

In order to simplify the Office Action, the Examiner has grouped the method and apparatus claims. As set forth in the previous Office Action, the prior art anticipates both the apparatus and the method. The text of the previous rejection reads:

Regarding claims 1, 2, 6, 7, 10 32, 33, 36, 37, and 42, Stewart discloses a system, medium, and method for generating and displaying a modeling application for simulating a dynamic system, comprising:

The text of the rejection uses the open-ended language "comprising" and includes each and every limitation from the independent claims. The fact that the prior art may also disclose "an electronic device" does not somehow preclude the prior art from disclosing the method.

Applicants' argument has been fully considered but has been found unpersuasive.

**4. Applicants further argue that:**

Stewart fails to disclose an executable graphical model, as required by claim 1.

The Examiner traverses this argument as follows.

The claim language "executable graphical model" has been rejected under 35 U.S.C. § 112, first paragraph, because the application discloses not an "executable graphical model" but rather a graphical model that may be processed or converted into executable instructions.

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Stewart discloses a graphical model (FIG. 4, etc.) that may be processed into executable instructions ("check calculations portion 310", column 7, line 48 - column 8, line 52).

Applicants' argument has been fully considered but has been found unpersuasive.

Applicants further argue that:

Stewart does not disclose "grouping a first data signal of a first signal type and a second data signal of a second signal type, said first signal type specifying a first set of signal attributes that include a first data type or a first data complexity and said second signal type specifying a second set of signal attributes that include a second data type or a second data complexity," as required by claim 1. Stewart discusses the physical characteristics of the wire in the system, e.g. the cable length and cable type, in connection with the configuration of the segment portions (Stewart, column 6, lines 40-67). However, Stewart does not discuss the signal types of the data guided by the Fieldbus protocol in the system.

The Examiner respectfully traverses this argument as follows.

Applicants claim language appears to be a verbose description of "a first data signal and a second data signal". Any two data signals inherently have signal attributes and data types or complexity.

Stewart discloses that the Fieldbus protocol uses a two wire loop (column 3, lines 60-65). Stewart further discloses that the signals have not only physical characteristics referred to by Applicants, but also simulates and calculates the **signal attributes** ("current draw per segment", column 8, lines 12-20 in conjunction with the "check calculations portion 310" beginning in column 7) and **data types or complexity** ("minimum voltage per segment", column 8, lines 34-43 in conjunction with the "check calculations portion 310" beginning in column 7). A voltage has two types, positive and negative.

Applicants submit similar arguments for claims 2, 6, 7, 10, 32, 36, 37, and 42.

Applicants' argument has been fully considered but has been found unpersuasive.

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**5. Regarding the previous rejections under 35 U.S.C. § 102 based upon US Patent No. 6,470,782 to Rostoker et al., Applicants argue primarily that:**

Rostoker does not disclose the following feature of amended claim 1: "grouping a first data signal of a first signal type and a second data signal of a second signal type to form a bus signal in an executable graphical model displayed on a graphical user interface, said first signal type specifying a first set of signal attributes that include a first data type or a first data complexity and said second signal type specifying a second set of signal attributes that include a second data type or a second data complexity". [...] It appears in the Office Action that the Examiner is pointing to the bus signal line 2220 in the Rostoker reference as disclosing the bus signal recited in Applicants' claim 1. Applicants respectfully disagree, because the disclosure of Rostoker does not indicate that the bus signal line 2220 carries data signals of different signal types, as required by claim 1.

The Examiner respectfully traverses this argument as follows.

In Rostoker, FIG. 22, the block 2220a depicts exemplary signal values on the four physical wires connecting the graphical representation of a microprocessor and the graphical representation of the controller. The *physical* wires so represented are tangibly different from each other and thus possess a different set of attributes, and carry different data signals and thus possess a different set of attributes. The four wires carry data signals of different signal types, as exemplified in block 2220a.

Applicants further argue that:

Rostoker cannot disclose that the bus signal line carries data signals of different signal types. In contrast, claim 1 requires "grouping a first data signal of a first signal type and a second data signal of a second signal type to form a bus signal in an executable graphical model displayed on a graphical user interface, said first signal type specifying a first set of signal attributes that include a first data type or a first data complexity and said second signal type specifying a second set of signal attributes that include a second data type or second data complexity.

The Examiner respectfully traverses this argument as follows.

Rostoker clearly shows a bus signal line carrying data signals of at least two different signal types. In FIG. 22, box 2220a, the bottom signal is a first type "always high" with low

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complexity. The top signal is a second type "sometimes high" with more complexity than the bottom signal.

Applicants' amended claim language is broad enough that nearly any two signals will read on the relevant limitations.

Applicants submit similar arguments for claims 2-7, 9-10, 32, 33-37, and 42.

Applicants' arguments have been fully considered but have been found unpersuasive.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**6. Claims 1, 2, 6, 7, 10, 32, 36, 37, and 42 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 6,411,923 to Stewart et al. (Stewart).**



Regarding claims 1, 2, 6, 7, 10 32, 33, 36, 37, and 42, Stewart discloses a system, medium, and method for generating and displaying a modeling application for simulating a dynamic system, comprising:

a user-operable input means for inputting data into an application (column 9, lines 10-26);

a display device for displaying an executable graphical model representing the dynamic system (column 9, lines 10-26); (FIG. 1, ref 136) and

an electronic device including memory for storing computer program instructions and data (FIG. 1, ref 132); (column 4, lines 10-33), and a processor for executing the stored computer program instructions (FIG. 1, ref 134); (column 4, lines 10-33), providing the bus signal as input to a non-virtual operation block (FIG. 6A, 6B, etc.), the computer program instructions including instructions for performing an operation on a bus signal with the non-virtual operation block displayed in an executable graphical model, wherein the bus signal comprises first data signal of a first signal type and a second data signal of a second signal type grouped to form the bus signal [“*The Fieldbus protocol is an all digital, two-wire loop protocol.*” (column 2, lines 17-19); (FIG. 6A, 6B, etc.) showing bus segments connecting various “non-virtual” operational blocks, see (column 3, lines 28-42); (column 4, lines 10-33); (column 6, lines 40-67); etc.]; and

said first signal type specifying a first set of signal attributes that include a first data type or a first data complexity and said second signal type specifying a second set of signal attributes that include a second data type or a second data complexity (“current draw per segment”, column 8, lines 12-20 in conjunction with the “check calculations portion 310” beginning in column 7;

“minimum voltage per segment”, column 8, lines 34-43 in conjunction with the “check calculations portion 310” beginning in column 7).

Regarding claims 2 and 33, Stewart discloses that at least a third data signal is grouped with the first data signal and the second data signal to form a bus signal (column 1, lines 50-62; FIG. 8A and 8B).

Regarding claims 6 and 36, Stewart discloses defining one or more physical attributes for the first data signal and the second data signal of the bus signal [“*Configure segment screen presentation may further include power supply input portion 606 via which a user provides the tool 120 with the voltage of the power supply that is used by the segment of the process control network.*” (column 6, lines 50-53)].

Regarding claim 7, Stewart discloses that the bus signal has a structure that is the same at an output port of the non-virtual operation block as at an input port of the non-virtual operation block [“*The bus 102 also may include one or more junction boxes 104 (JB1, JB2, JB3), which are often referred to as “bricks.”*” (column 4, lines 10-15); FIG. 8A showing the Fieldbus connector entering from the left (FFI) and leaving to the right (H1)].

Regarding claims 10 and 37, Stewart discloses validating a constraint on the bus signal [“*The method includes a software analysis tool having access to information regarding standard protocol criteria including a length of the bus, a cable type of the bus and a voltage requirement*”

*of the field device for analysis by the tool to assure that the process control network design conforms to the criteria of the standard protocol.” (column 2, lines 49-58)].*

**7. Claims 1-7, 9-10, 32-37, and 42 are rejected under 35 U.S.C. § 102(b) as being anticipated by US Patent No. 6,470,482 to Rostoker et al. (Rostoker).**

Regarding claim 1, Rostoker discloses a method comprising the steps of:

Grouping a first data signal of a first signal type and a second data signal of a second signal type to form a bus signal in a graphical model displayed on a graphical user interface [*“A bus signal line 2220 (CTRL<0...3>, representing four physical “wires”) connects between the graphical representation 2216 of the microprocessor 2116 and the graphical representation 2214 of the controller 2114 and extends off towards the right hand side of the display screen 2200 (as depicted).” (column 32, lines 46-51)];*

said first signal type specifying a first set of signal attributes that include a first data type or a first data complexity and said second signal type specifying a second set of signal attributes that include a second data type or a second data complexity [FIG. 22, box 2220a showing at least two different signals with different attributes and complexity];

Providing the bus signal as input to a non-virtual operation block (FIG. 22, line 2220 as input to block 2214); and

Performing an operation on the bus signal with the non-virtual operation block [the bus 2220 connects to graphical representation 2214 of the controller 2114, and *“The design*

*description 2114a for the other controller 2114 (CHIP 3) refers to a core cell 2128 (CORE 'C') and a logic block 2130 (misc. logic 'C')."* (column 32, lines 31-33)].

Regarding claim 2, Rostoker that at least a third data signal is grouped with the first data signal and the second data signal to form a bus signal (column 32, lines 46-51, describing CTRL<0...3>, representing four physical "wires").

Regarding claim 3, Rostoker discloses that an outlet of the non-virtual operation block connects to a modified bus signal comprising a modified first data signal, where the modified first data signal represents an output of the operation where the first data signal is an input to the operation, and a modified second data signal, where the modified second data signal represents an output of the operation where the first data signal is an input to the non-virtual operation [FIG. 22, where input bus "CTRL<0..3>" ref. 2220 connects to operation block ref. 2214, which in turn is connected to output bus "C<0..3>".].

Regarding claim 4, Rostoker discloses that the step of performing an operation represented by the non-virtual operation block comprises solving the operation using values represented by the first data signal and the second data signal as inputs to the non-virtual operation [“A microprocessor 2116 (CHIP 1), two controller chips 2110 and 2114 (CHIP 2 and CHIP 3, respectively) and nine memory chips 2112 (CHIP 4) are included in the design.” (column 32, lines 12-18); “The design description 2114a for the other controller 2114 (CHIP 3) refers to a core cell 2128 (CORE “C”) and a logic block 2130 (misc. logic “C”).” (column 32,

lines 31-34); *“A bus signal line 220 (CTRL<0...3>, representing four physical “wire”) connects between the graphical representation 2216 of the microprocessor 2116 and the graphical representation 2214 of the controller 2114...”* (column 32, lines 46-51)]. Rostoker discloses that block 2214 corresponds to a memory controller 2114, receiving input bus “CTRL<0..3>”, operating on the same to perform memory controller functions, and producing the output bus “C<0..3>”, as disclosed by FIGS. 21-22.

Regarding claim 5, Rostoker discloses converting the graphical model to executable computer readable instructions representing the graphical model and executing the computer readable instructions, wherein the computer readable instructions implement the functionality specified by the model [*“The logic compiler takes the net list as an input, and using the component database puts all of the information necessary for layout, verification and simulation into a schematic object file or files whose format(s) is(are) optimized specifically for those functions. The logic verifier checks the schematic for design errors, such as multiple outputs connected together, overloaded signal paths, etc., and generates error indications if any such design problems exist. The logic simulator takes the schematic object file(s) and simulation models, and generates a set of simulation results, acting on instructions initial conditions and input signal values provided to it either in the form of a file or user input.”* (column 9, lines 1-15)].

Regarding claim 6, Rostoker disclose the step of defining one or more physical attributes for the first data signal and the second data signal of the bus signal [FIG. 22, ref 2200. The first

signal 0 is physically connected to blocks 2216 and 2214. The second signal 1 is physically connected to blocks 2216 and 2214.].

Regarding claim 7, Rostoker discloses that the bus signal has a structure that is the same at an output port of the non-virtual operation block as at an input port of the non-virtual operation block [FIG. 2, input bus “CTRL<0..3>” has the same structure as output bus “C<0..3>.” Both input and output bus comprise four physical “wires.”].

Regarding claim 9, Rostoker discloses that the first signal type and the second signal type are the same [FIG. 22, ref 2200a depicts first signal 0 at a logic “low” during the fourth interval, while second signal 1 is at a logic “low” during the fourth interval. Thus the first and second signal have the same type during the fourth interval.].

Regarding claim 10, Rostoker discloses validating a constraint on the bus signal [“*The logic synthesis process 2304 provides indications on information about design rule violations 2308. This information includes data about what signals and components of the design are in violation of the rules. In response, the schematic display system calls up an appropriate schematic diagram (i.e., a schematic diagram on which the offending signal, signals, and/or components can be found) and displays the schematic diagram and simulation results corresponding to the design rule violations 2308.*” (column 33, lines 44-59)].

Claims 32-37 recite a medium holding computer-executable instructions for performing the method of claims 1, 2, 4, 5, 6, and 10. As Rostoker discloses a computer-implemented method (FIG. 8), Rostoker anticipates claims 32-37 for the reasons set forth above regarding claims 1, 2, 4, 5, 6, and 10.

Regarding claim 42, Rostoker discloses a system for generating and displaying a modeling application for simulating a dynamic system, comprising:

A user-operable input means for inputting data to the application [(FIG. 8, “Graphical User Interface 806”); *“A pointing device is any device through the use of which a user may ‘point’ to and identify objects on a display screen...”* (column 3, lines 33-45, etc.)];

A display device for displaying a graphical model representing the dynamic system (FIG. 8, “Graphical User Interface 806”); and

An electronic device including memory for storing computer program instructions and data, and a processor for executing the stored computer program instructions (column 1, line 25 – column 2, line 4), the computer program instructions including instructions for performing an operation on a bus signal displayed in a graphical model (FIG. 22, ref 2216, 2220, 2214), wherein the bus signal comprises a first data signal of a first signal type and a second data signal of a second signal type grouped together to form the bus signal [(FIG. 22, ref 2200, 2200a), first signal 0 of first signal type “high” during the third interval, second signal 1 of a second type “low” during the third interval].

8. In response to the previous rejection of claim 8 under 35 U.S.C. § 103 as being obvious over Rostoker in view of Simulink, Applicants refer to the arguments submitted above regarding the independent claims. Those arguments have been addressed above and found unpersuasive.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. § 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. § 103(c) and potential 35 U.S.C. § 102(e), (f) or (g) prior art under 35 U.S.C. § 103(a).



**9. Claim 8 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Rostoker as applied to claim 2 in view of “SIMULINK Model-Based and System-Based Design Version 4” by The MATHWORKS (Simulink).**

Regarding claim 8, Rostoker does not expressly teach that the operation comprises one of the claimed operations.

Simulink teaches a dead zone function (page 9-66).

Rostoker and Simulink are analogous prior art because both are directed to simulation.

It would have been obvious to a person of ordinary skill in the art at the time of Applicants' invention to combine the teachings of Rostoker and Simulink because Simulink provides a graphical user interface which enhances usability and does not require a user to formulate complicated equations [*“For modeling, Simulink provides a graphical user interface (GUI) for building models as block diagrams, using click-and-drag mouse operations. With this interface, you can draw the models just as you would with pencil and paper (or as most textbooks depict them). This is a far cry from previous simulation packages that require you to formulate differential equations and difference equations in a language or program. Simulink includes a comprehensive library of sinks, sources, linear and nonlinear components, and connectors.”* (Simulink, pages 1-2 to 1-3)].

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of Applicants' invention to combine the teachings of Rostoker and Simulink by using a dead zone function in the controller 2114 to arrive at the claimed invention.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Proctor whose telephone number is (571) 272-3713. The examiner can normally be reached on 8:30 am-4:30 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached at (571) 272-3753. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jason Proctor  
Examiner  
Art Unit 2123

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/Paul L Rodriguez/

Supervisory Patent Examiner, Art Unit 2123